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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,920	12/09/2003	Peter J. Edmonson	H311042US	2407

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EXAMINER	
MILLER, ROSE MARY	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/729,920	EDMONSON ET AL.	
	Examiner	Art Unit	
	Rose M Miller	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 December 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☒ Claim(s) *6-11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 December 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because Figures 1, 3, 4, 5 and 7 are incomplete. Each of the recited Figures indicates that part of the right side of the drawing has been cut off. Such indications include missing arrows, open boxes, and incomplete words. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 6 is objected to because of the following informalities: the phrase "claim 1 are in said at least one reflector segment" is not understandable. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by **Schmidt et al. (US 5,841,214)**.

Schmidt et al. clearly discloses a surface acoustic identification device (see Figures) having a piezoelectric substrate (2), an interdigitated transducer input/output (3, see column 2 lines 52-62) mounted on the substrate (2) for receiving a radio frequency signal (see column 3 lines 4-20) and propagating a corresponding surface acoustic wave along a surface of the substrate; an IDT reflector array (4, 5) mounted on the substrate and operable to receive said surface acoustic wave and reflect said surface acoustic wave in modified form back to the IDT input/output (3) for transmission of a corresponding modified RF signal back from the device (see column 3 lines 4-20), and said IDT reflector array having at least one reflector segment whose reflectivity characteristics (coded reflector array 4 with high reflectivity reflector 5) are controlled (encoded) to control the nature of the modified RF signal.

With regards to claim 2, **Schmidt et al.** clearly indicates the reflectivity characteristics of said at least one reflector segment are controlled during the manufacturing process to provide a unique code to the modified RF signal.

5. Claims 1 and 3-5 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by **Ruile et al. (US 6,084,503)**.

Ruile et al. clearly discloses a surface acoustic identification device (see Figures) having a piezoelectric substrate (22), an interdigitated transducer input/output (23, 23', see column 3 lines 10-47) mounted on the substrate (22) for receiving a radio frequency signal (see column 3 lines 20-23) and propagating a corresponding surface acoustic wave (25) along a surface of the substrate; an IDT reflector array (26, see column 3 lines 10-47) mounted on the substrate and operable to receive said surface acoustic wave and reflect said surface acoustic wave in modified form back to the IDT input/output (3) for transmission of a corresponding modified RF signal back from the

device, and said IDT reflector array having at least one reflector segment whose reflectivity characteristics (segment 26 with impedance element 12) are controlled to control the nature of the modified RF signal (12 controls the reflectivity of the surface acoustic wave).

With regards to claim 3, **Ruile et al.** clearly discloses the reflectivity characteristics of the at least one reflector segment being controlled by a variable load externally thereof (impedance element 12, see column 3 lines 10-47).

With regards to claims 4 and 5, **Ruile et al.** clearly discloses at column 4 lines 51-66 the external load (impedance element 12) comprising a transducer (displacement pick-up/position transducer) or an analog sensor (photoresistors, magnetoresistors, temperature-sensitive resistors).

Allowable Subject Matter

6. Claims 6-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest a surface acoustic wave sensor or identification device comprising, in combination with the other recited elements, the at least one reflector segment whose reflectivity characteristics are controlled to control the nature of the modified RF signal having a fluidic chamber which in use contains fluid operable to control the nature of the reflected surface acoustic wave and hence the nature of the modified RF signal.

The closest prior art is that of **Muller et al. (US 4,361,026)** which teaches utilizes a SAW resonator to determine the characteristics of a fluid under test. This is done by measuring the resonance frequency of the resonator as the fluid varies the velocity and/or attenuation of the waves propagating through the piezoelectric substrate. There is no teaching in the prior art of utilizing a fluidic chamber containing fluid to control the

reflectivity of a reflector segment in a SAW delay line (actual components of IDT sensor and identification device).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kuisma et al. (US 4,378,168) discloses a dew point detection method and device utilizing surface acoustic waves.

Yamaguchi (JP 07260746 A) discloses a surface acoustic wave liquid sensor.

Baer et al. (US 5,321,331) discloses a double-sided fluid sensor for reduced attenuation of shear transverse waves.

Maier et al. (US 5,966,008) discloses a radio-interrogated, surface-wave technology current transformer for high voltage systems.

Reindl et al. (US 6,144,332) discloses a passive surface wave sensor that can be wirelessly interrogated.

Edmonson et al. (US 2003/0231107 A1) discloses a dual track surface acoustic wave RFID/sensor.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rose M Miller whose telephone number is 571-272-2199. The examiner can normally be reached on Monday - Thursday, 7:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RMM
29 September 2004

HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
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